THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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CLINICAL METHODS.

It is generally admitted that in many directions the clinical methods of veterinary practice are likely always to fall more or less short of those of the medical man. Nevertheless, veterinary surgeons continue to improve their clinical methods, and to modify them in accordance with the anatomical and physiological peculiarities of their different patients. Less than twenty years ago, most veterinary surgeons considered the passage of the stomach tube in the horse as not very far from impossible, and the catheterisation of the cat as quite so. Both measures are now frequently adopted in practice by an increasing number of clinicians, who having learned their technique find no particular difficulty in performing them. What was wanted, and has been obtained in each case, was simply a modification of the instrument to suit the peculiarities of the animal. The steadily increasing use of the ophthalmoscope in general practice is another case in point, and another is the successful application of rhino laryngoscopy and cystoscopy to certain animals, though neither of these latter have yet become established in practice. Yet another is the equine operating table, which is gradually finding its way into infirmaries of large practices.

All veterinarians can now recognise how much the general acceptance of chloroform by the profession—which, though it came tardily, was rapidly accomplished when it did come—has done to bring veterinary surgery nearer to the human level. Other surgical developments have had the same effect, in some cases a more rapid and marked one. Local anæsthesia by hypodermic injection—an outgrowth of the last thirty years—is one instance, and the much more recent introduction of skin sterilisation by iodine or similar drugs is another. Both these great developments originated in the medical profession, both have been at once taken up by us, and both—especially perhaps the latter—have enormously facilitated our work and improved its results.

Veterinary and medical operations alike can be divided into two great classes—those performed in well-appointed hospitals and those undertaken in the more difficult circumstances of private practice. In both cases, and especially the latter, veterinary technique is infinitely nearer the level of human surgery than it was a generation ago. Veterinary surgeons in private practice, at the cost of very little trouble, can now perform many operations quite as aseptically as can general medical practitioners.

These are great advances. Their most valuable feature is that they are not confined to laboratories and schools—they are developments of general practice; and their greatest effect has been, and will be, to raise the general standard of the working clinician.

AN UNDEVELOPED TWIN.

As I always appreciate so much the original articles and descriptions of cases by other V.S., I feel somehow it is my duty to do my little bit in sending along anything a little out of the common which may be of some small interest to others.

A few days ago I happened to be at a farm where a cow had calved down just previous to my arrival, she was a big framed, 6 gallon cow, and had given birth to a good, strong, normal heifer calf. With the afterbirth, and attached to it, came away the subject of these few notes. It was a little larger than an ordinary full-sized football, and had evidently continued development up to the last, as it smelt quite sweet, and the hair was as clean and as firm as on the live calf. I had the specimen photographed before and after opening, and then sent it to Dr. O. Charnock Bradley, of Edinburgh, who has very kindly sent me the enclosed description and notes.

Horsham. SAM SMITH.

NOTE BY DR. O. CHARNOCK BRADLEY.

"The specimen is evidently one illustrating the effect produced in a twin when the co-twin dominates the circulation. As has been shown recently by Lillie ('The Free-Martin,' *Journ. Exp. Zool.*, 1917, XXIII, 371-452) fusion of the chorions of twins and anastomosis of circulation, is very common in cattle. In only two instances out of 55 specimens of twin pregnancy in cattle examined by him were there two separate chorions.

It was at one time assumed that twins in which one became markedly malformed were monozygous, that is, were developed from a single fertilised ovum. Lillie's investigations, however, would seem to point to their origin from separate ova, fusion of the chorions taking place at a variable time during gestation. This would account for the varying degree of malformation presented by different specimens.

The present specimen is mainly an amorphous mass of fat and muscle, with some traces of the bones of the skull and coils of indeterminable intestine. An extremely malformed mouth is present, but no other organs can be recognised with any degree of certainty."

CONTAGIOUS ABORTION AND MILK ANALYSIS.

Recently the writer was consulted concerning the analysis of milk produced by cows affected with abortion, and as a reference to the available literature on this disease failed to give the desired information, tests were carried out and are here recorded.

The presumptive standard laid down by the Sale of Milk Regulations of 1901, which were made by the Board of Agriculture under powers given by the Sale of Food and Drugs Acts, has been the subject of much discussion. These regulations state that a sample of milk which contains less than 3 per cent. of fat or less than 8·5 per cent. of solids not fat, shall be presumed for the purposes of the Acts, until the contrary is proved, to be not genuine, by reason of the abstraction of milk fat or solids not fat (as the case may be) or the addition of water.

A cowkeeper who is proceeded against and uses as a defence that the milk he sold was from cows affected with abortion will, in view of the following tests, be probably convicted.

The following table gives particulars regarding the cows from which samples of milk were taken for analysis.

Sample.	Breed.	Age.	Expected.	Calved.
No. 1	Ayrshire	4 yrs.	Dec. 5	Oct. 1
2	„	3	Oct. 5	Aug. 13
3	„	5	Nov. 24	Aug. 20

The animals were primiparae and had received no medicinal or other treatment for abortion.

The samples were taken at the ordinary milking time and on completion of the milking. Each udder was completely stripped and the milking was done by the usual attendant.

The particulars concerning the number of days between the expected and actual calving and the time that elapsed after abortion before the samples were taken, were as follows:—

Sample.	Calved before expected.	Sampled after abortion.
No. 1	Days 65	Days 6
2	„ 53	„ 55
3	„ 96	„ 48

The analytical part of this enquiry was carried out by Mr. T. A. Wilson, F.I.C., who kindly furnished me with the results given below:—

Sample Nos.		1	2	3
Spec. grav. at 15·5° C.		1·0337	1·0306	1·0338
Fat	... p/c	4·67	4·37	3·23
Total solids	... „	14·56	12·98	12·69
Non-fatty solids	„	9·89	8·61	9·46
Lactose	... „	4·2	4·5	5·1
Ash	... „	0·84	0·70	0·78

From the analysis it is apparent that the samples consisted of genuine whole milk as defined by the Sale of Milk Regulations of 1901.

The chief causes in the variation in the composition of milk are considered to be:—the individuality or breed, age, stage of lactation, general condition, weather, change of milker, method and rapidity of milking, excitement, disease, season of the year, feeding, and the interval between the times of milking.

W. J. Young, F.R.C.V.S., D.V.S.M. (Vict).

ABSTRACTS FROM FOREIGN JOURNALS.

A case of Bovine Puerperal Mania.

Luigi Zerboni reports the following case. On January 6, 1918, he was called to a cow stated to be presenting symptoms of rabies. He found a five-year-old cross-bred cow, in good condition. The animal had calved satisfactorily the day before, expelling the after-birth and maintaining the appetite and all the organic functions unaltered. Afterwards she had suddenly presented the following symptoms, which Zerboni observed.

The skin was normal, and the hair smooth. The eyes gave the impression of a slight degree of excitement. The saliva was flowing in filaments from the commissure of the lips: and the jaw was constantly being moved in an action resembling seizing more than mastication. Fever was absent; and the pulse was full and almost normal.

In the stall the cow was constantly biting the wood of the stable, the chain, and her own fore limbs, as if she suffered from marked pruritus. The biting was not of a ferocious nature.

When taken outside the stall and made to walk, she proceeded normally so far as the movements of the limbs were concerned; but she continually held the head very low, almost touching the ground, in the attitude of a hunting-dog following a scent. When left free to move independently, she was able to recognise and avoid obstacles, but did not respond to the call of the owners. She seized food presented to her, but did not masticate it.

Zerboni diagnosed the case as one of puerperal mania, and prescribed 25 grammes of chloral hydrate in 250 c.c. of infusion of camomile. Returning the next day, he found the cow completely recovered. The owner stated that the symptoms had disappeared half an hour after the adminstration of the chloral.

This is the first case of the kind that Zerboni has seen in seventeen years of professional practice; and he records it partly to confirm Fleming's statement with regard to its prognosis and treatment, and partly to draw the attention of young colleagues to a disease which might easily be confused with rabies. He offers no hypothesis as to the causation of the disease, but points out that certain factors to which other observers have attributed it could be excluded from this case. The cow had always had her calf near her, she was constantly kept in a rather warm and sufficiently hygienic stall, and there was no digestive disturbance.—(*La Clinica Veterinaria*).

Another Poisonous Fungus.

In May, 1916, at the Bacteriological Institute of the National Department of Hygiene, F. Rosenbuch and J. Zabala had occasion to observe in the province of Buenos Aires a hitherto unknown bovine disease characterised by trembling and falling of the animals, and sometimes accompanied by rapid death. The disease is known by the names of "tembleque" or "chuco." Study of the blood of affected animals excluded the presence of micro-organisms, and negative results of injections of such blood both in cattle and in other species of animals likewise excluded the idea of a parasitic nature of the disease. Rosenbuch and Zabala were led to the opinion that the disease was produced by intoxication due to an unknown cause.

The correctness of this diagnosis is now demonstrated by examination of the flora of the pastures where the disease has appeared. The pastures abounded with the grass *Paspalum notatum* Flug., which is perfectly innocuous when sound, but is poisonous when it is attacked by a certain fungus. The grass attacked by this cryptogam the species of which is not yet determined, is, however, innocuous to horses.

On that account Rosenbuch and Zabala advise, as a preventive measure, that horses should be put into the pastures before cattle are placed there. When that is impossible, they advise passing a rake over the pastures, as the affected portions of the grass, being much more easily detachable than the sound ones, are thus made to fall. As curative measures, they recommend jugular bleeding, subcutaneous injections of eserine and pilocarpine, and purgatives.

The same disease has been observed by Juan N. Murtagh in the provinces of Buenos Aires and Santa Fé, where it affected from 30 to 50 per cent. of the cattle.—*La Clinica Veterinaria.*

The results of Arytenoidectomy.

The following is a description of the larynx of a horse which had been subjected to the operation of arytenoidectomy in 1906 and used as a saddle horse until 1913. The specimen was shown to La Société de Medécine Vétérinaire, by Mullet, who gave the history of the case. The horse was useless from roaring, so operation was decided upon. Cricotomy was first tried without success, and afterwards arytenoidectomy was practised. Two months after this operation, which was performed by Cadiot, Mullet commenced to have the horse walked, and then proceeded to gradual exercise and to saddle work. At the end of six weeks the horse returned to his habitual amount of work.

Up to the sixth month the roaring persisted in the same degree as before the operation. In the seventh and eighth month a progressive improvement was initiated; and this continued so that at the end of the ninth month the horse was able to bear a fast and long trot without any abnormal sound being produced. The only abnormality that Mullet was able to observe was that when the animal entered the stable and drank rapidly about half a litre of water escaped through the nostrils, but the same phenomenon was never noticed in the case of solid food. That is to say, the functions of the pharynx were normal when the animal swallowed solid food, and only the deglutition of liquids enabled a certain functional imperfection to be seen. This latter was of little importance.

The horse ultimately died from other causes, and Mullet made a post-mortem examination of the larynx. He found a fold of mucous membrane at the region of the base of the excised arytenoid, and to this he attributed the fact that the success of the operation had not been more complete. The left vocal cord was farther away from the median line of the larynx than the right one; it was very manifestly directed outwards, and definitely fixed in that position by cicatricial contraction. There was no doubt that the ablation of the paralysed left arytenoid widened the laryngeal opening. The left laryngeal ventricle was also reduced to a third of its normal amplitude.—*Revista de Higiene y Sanidad Veterinaria.*

W. R. C.

Contagious Abortion in Mares and Joint-ill in Foals.

Royal Veterinary College,
Camden Town, N.W.1.,

To the Editor of "The Veterinary Record."

Sir,—About a year ago you were kind enough to use your columns to intimate that a special serum for use against contagious abortion in mares and joint-ill in foals had been prepared in the Research Institute at the Royal Veterinary College, and that it would be supplied gratis on application to members of the profession.

I now desire to make it known that a considerably larger quantity of the serum is now ready for use during the present foaling season, and, as before, it will be issued free of charge to practitioners who are willing to accept it under certain conditions. The most important of these is that the fullest possible information with regard to the treatment and any circumstances bearing on the origin of the case shall eventually be furnished to me.

I am, Sir, yours faithfully,

17th April. J. M'Fadyean.

THE SUPPLEMENTARY RATION.

Royal College of Veterinary Surgeons,
10 Red Lion Square, W.C.1.
13th April, 1918.

To the Editor of "The Veterinary Record."

Sir,—I shall be glad if you will kindly give publicity to the following letter which I have received from the Ministry of Food. At this period of the year no doubt many practitioners will be glad to avail themselves of the opportunity to obtain supplementary rations.—Yours faithfully,

Fred Bullock, Secretary.

MINISTRY OF FOOD,
GROSVENOR HOUSE, W. 1.

Ref. L14/23480. 12th April, 1918.

The Secretary,
Royal College of Veterinary Surgeons,
10 Red Lion Square, W.C, 1.

Sir,—I am directed to acknowledge the receipt of your letter of the 11th inst., and to inform you that Veterinary Surgeons are included in the List of those persons entitled to the Supplementary Ration. They will be graded under Class "D."

I am to add that any further inquiries on this subject should be addressed to your Local Food Office.—I am Sir, your obedient Servant,

(sgnd.) J. S. LEAVER,
Supplementary Ration Section.

A NOTE ON DOURINE.*

By Colonel H. T. PEASE, C.I.E., V.D., I.C.V.D.,
Principal, Punjab Veterinary College, Lahore.

INTRODUCTION.

This disease is a specific disease of the horse and ass caused by a trypanosome and spread by coitus. It is, therefore, confined to breeding animals and, on account of its insidious nature and serious effects, is of great importance so far as the horse-breeding industry is concerned.

I discovered a severe outbreak of the disease amongst the stallions of the Horse-breeding Department in 1902, but energetic measures stamped it out in all the districts in which it was known to exist, and no cases have occurred in them until quite recently, when a few cases appeared in the Dera Ghazi Khan District which enquiry showed had been introduced from Baluchistan, where the malady was not known to exist in 1902.

It now appears that the disease prevails to a large degree in Baluchistan and hence the present note may prove of interest.

Trypanosomes are Protozoa of the class Flagellata characterised by the possession of a fusiform body more or less elongated, with at one extremity a flagellum which is continued along the body of the parasite as the the thickened edge of an undulating membrane. The body is composed of protoplasm. There is a nucleus situated about the middle of the body, and a small chromatic body which is called the centrosome is situated quite near the end opposite to the free flagellum.

Along the upper part of the body and bounded above by the flagellum which starts from the centrosome is a thin membrane, the undulating membrane. The flagellum in animal trypanosomes often extends a short distance beyond the body, forming a free flagellum. Movement is secured by the lashing of the flagellum which actuates the undulating membrane.

The animal trypanosomes multiply by longitudinal division in the blood or lymph. Like other animal parasites, they often effect a robbing action on the host. They excrete toxic material and in some cases give rise to local chronic inflammations. They usually appear in crops which die off for the most part to be succeeded by another crop.

The common trypanosomes of the horse in India are:
(1) *Trypanosoma evansi*, causing Surra.
(2) *Trypanosoma equiperdum*, causing Dourine.

* *Agricultural Journal of India*, Vol. XII, Part I. (Received for publication on 16th Nov., 1916).

T. equiperdum was first discovered at the remount depot at Constantine by Rouget in 1894. The strain of virus which he was dealing with appears to have been of exceptional virulence. Schneider and Buffard again found the trypanosome in horses and donkeys and reproduced the disease in the horse by the parasites passed through the dog in 1899. The virulence of their parasite was less than that found by Rouget, and they were inclined to think that the latter had been dealing with another trypanosome. The great variation of virulence of the trypanosome in different countries, especially in regard to its effects on inoculated animals, greatly discounts Schneider and Buffard's contention. Laveran and Mesnil agree that Rouget was dealing with the Dourine trypanosome. Doflein named the parasite *Trypanosoma equiperdum* in 1901, a few days before Laveran and Mesnil suggested the name of *Trypanosoma rougeti*, so the former must, according to the law of priority, stand.

In regard to the measurements of the trypanosome there is some difference of opinion. Laveran and Mesnil make it 25 to 28μ long. The longest example found in India was 35·8μ. The mean in the vaginal mucus was 22μ, the longest found being 31·28μ. The variations in size were so great that it was at one time thought that more than one variety of parasite was being dealt with. The average breadth is 1·48μ mean, the maximum being 3·32 and the minimum 0·85.

In ordinary fresh preparations the parasite resembles the Surra parasite *Trypanosoma evansi* from which it cannot be distinguished morphologically. It stains fairly uniformly but perhaps a little less deeply than the other, and possesses usually no chromatic granules. The only form of division so far seen in this country is that by longitudinal division. Laveran and Mesnil talk of trypanosomes with six nuclei two of which were still dividing. Rabinowitsch and Kempner talk of parasites with eight or ten nuclei arranged in the form of a rosette. Possibly, too, one of Schneider and Buffard's figures represents a similar case of multiple division.

Vitality of the parasite.

Trypanosoma equiperdum appears to be a strict parasite. It retains its motility only for a few hours in the blood outside the body; but Laveran and Mesnil have seen it remain motile for 48 hours in a sealed preparation kept at a temperature of 36° C. Schneider and Buffard found that the blood of an infected animal is non-infective after 24 hours, and this is our experience in India. The trypanosome is said to retain its virulence for three days when mixed with citrate solution and kept in the refrigerator. It keeps for two days in defibrinated blood and for only one day after the addition of horse serum.

(To be continued.)

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1918:—

A. C. Duncan, Maj. A.V.C.	£1	1	0
G. E. King, Abingdon	1	1	0
G. D. Lansley, Axminster	1	1	0
P. Vincent, Romford	1	1	0
*Veterinary Officers, British E. Africa (1916, 1917)	21	0	0
Previously acknowledged	667	2	0
	£692	6	0

* This amount was received in 1917, but its announcement was delayed pending the receipt of a list of subscribers. The list has not yet arrived, but the names will be published as soon as it is received.

VICTORIA VETERINARY BENEVOLENT FUND.

A Council meeting was held at 10 Red Lion Square, on Thursday, April 4th, when the following members were present: Mr. S. H. Slocock, President, in the Chair; Messrs. N. Almond, G. A. Banham, W. F. Barrett, H. Sumner, E. A. West, Prof. G. H. Wooldridge, and Mr. P. J. L. Kelland, Hon. Sec. and Treas.

The minutes of the previous meeting, having been printed, were taken as read and confirmed.

Apologies for absence were received from Messrs. Dunstan, Gooch, Howard, MacCormack, Price, and Trigger.

REPORT BY THE HON. SECRETARIES.

Since the last quarterly meeting the following new subscriptions and donations have been received:—

Subscriptions.

H. Andrew, Borough	£1	1	0			
S. Bennett, Cambridge		10	6			
S. C. J. Bennett, Cambridge		10	6			
W. W. Grasby, Daventry	1	1	0			
G. J. Harvey, Bangkok (Life M.)	10	10	0			
R. N. Lewis, Capt. A.V.C.		10	6			
J. S. McCann, Tullamore		10	6			
F. C. Mahon, Chiswick		10	6			
J. A. Meredith, Lt.-Col. A.V.C.	2	2	0			
J. H. Norris, D.A.T.I.		10	6			
J. M. L. Penhale, Bd. of Agric.		10	6			
J. H. Pierse, Listowel		10	6			
A. Payne, Weybridge		10	6			
H. S. Reynolds, Daventry	1	1	0			
W. H. Taylor, Maj. A.V.C.		10	6			
				21	0	0
Donations.						
J. Brown, Invergordon		10	6			
Anonymous (D.M.)	5	0	0			
M. Clarkson, Richmond	1	1	0			
National V.M.A.	10	10	0			
Anonymous (Siam)	6	2	11			
F. Bazley, Devizes	4	4	0			
A. Gofton, Capt. A.V.C.		10	6			
Midland Counties V.M.A.— per Mr. F. L. Gooch	3	0	0			
Royal Counties V.M.A.— Dividends on War Loan	1	10	4			
Collecting Boxes:						
S. H. Slocock		7	0			
Royal (Dick) Vety. College		11	0½			
				33	16	3½
Boltons Cinema Fund				10	10	0
				£65	6	3½

Several subscriptions for 1917 are still outstanding, notably those of twenty members who paid in 1916, which we shall try to get in. In the case of army officers who signed banker's orders during 1917, eight are still unpaid for the present year, and a communication has been sent to Messrs. Holt on the matter.

As will be seen from the correspondence to be read, we have good friends in the Midland Counties V.M.A. and the Royal Counties V.M.A., and if the generous action taken by these two Societies were followed generally, there would never be any anxiety for the welfare of the Fund.

One member of the Fund made an offer to double his subscription if 100 other members would undertake to double theirs or to secure another 100 subscribers. We advertised this offer in the Veterinary Press, but so far without any response.

In the case of the boy Farr, we are informed by the doctor that he is not strong enough to go to a public school, and the London Orphan School Committee have been unable, therefore, to accept him as a candidate. Letters from the school and the mother will be read.

In Case No. 37, to be brought before you to-day, a grant of 10/- per week has been made by the National Veterinary Medical and Mutual Defence Society, and on the authority of the President and Treasurer a similar grant for the past two months has been made from this Fund.

It was resolved: That the report be received and adopted

Correspondence. A letter was read from the Secretary of the Central V.M.S. nominating Mr. J. W. McIntosh as representative of the Society on the Council of the Fund.

A letter (19th Feb.) was read from Mr. F. L. Gooch, reporting that a collection on behalf of the Fund had been taken at the February meeting of the Midland Counties V.M.A., resulting in a sum of £3, a cheque for which was forwarded. At the same time seven members present arranged to take collecting boxes. It was resolved: That the best thanks of the Council be conveyed to Mr. Gooch for his friendly action, and to the Midland Counties V.M.A. for their generous sympathy with the needs of the Fund.

The following letter (21st Feb.) was received from the Secretary of the Royal Counties V.M.A.:—

"I have pleasure in forwarding to you the enclosed cheque for £1 19s. 4d., which is the interest on money the above Society has invested in War Loan. I hope to send you a cheque at the end of each year in addition to our annual contribution, and it is our hope that other Societies may think fit to do likewise. I have also to acknowledge your letter of the 20th inst., *re* representatives to the Fund, which will be placed before the members.—Yours faithfully, G. P. MALE."

It was resolved: That the best thanks of the Council be conveyed to the Royal Counties V.M.A. for their generous donation, and also for their very valuable recommendation of the Fund to the attention of other Societies.

Relief. Applications were received for the reconsideration of Cases 1 and 12, in which the Council had discontinued the grant, but it was resolved: That the applicants be informed that in the present circumstances the Council regret that they cannot accede to the requests made.

Case No. 37. M.R.C.V.S., without means, in hospital. On the proposition of Mr. Barrett, seconded by Mr. West, it was resolved: That the grant of 10/- per week made in this case be approved, and continued for the present.

Case No. 38. Daughter of M.R.C.V.S. Cardiac trouble. On the proposition of Mr. Barrett, seconded by Mr. Banham, it was resolved: That a grant of 10/- per week be made in this case for the present quarter, but that further enquiries be made as to the assistance the lady may be able to obtain from her brothers.

Annual Report. A draft of the Annual Report was submitted, and with one or two amendments was approved and ordered to be issued, together with the Annual Balance Sheet when audited, and a copy of the Revised Bye-laws.

Accounts. An account of £2 1s. 6d. for printing was passed for payment.

P. J. L. KELLAND, FRED BULLOCK, } Hon Secs.

The latest official figures show that in 1917 the number of pigs in the United Kingdom was 3,008,000, nearly 1,000,000 less than in 1914—and the lowest on record since 1880. Big prices continue to be made for pigs of all classes, but the record so far is for a couple of gilts, sold by auction at Mr. Jones' farm, Crumpsall, which made £152.

Auto-inoculation and Primary Development of the Horse Bot Larva.

E. Roubard, C. R. Acad. Sci., Mar. 12, 1917. "The mode of entry of the larvæ of the horse bot (*Gastrophilus intestinalis* De Geer) into the intestinal tract of their host and the primary conditions of their development are still unknown. According to certain authors (Numan, Brauer) the young larvæ after hatching out make their own way into the mouth and nostrils. The majority of writers, however, state that the larvæ are introduced into the mouth by licking and then swallowed. The licking was attributed to the irritation set up by the presence of the small larvæ on the skin.

Some Russian authors have set forth special theories on this subject based on the discovery of Gastrophilus larvæ in cutaneous channels in a certain human myiasis. According to Cholodkovsky the larvæ after leaving the egg penetrate into the epidermis of the horse and set up an irritation which would cause the animal to bite the invaded tracts and extract the larvæ from them. Portchinsky, on the other hand, considers that only some of the larvæ, which later die out, make their way into the epidermis; these fail to continue their development but the irritation set up by them would cause the horse to lick and collect with its tongue the other larvæ which then pass into the digestive tract.

According to the author's observations the sequence of events occurs in a very different way. In the first place the eggs do not hatch out spontaneously and the primary larvæ may remain within the egg in a state of latency for several weeks. Then the ripe egg liberates the larvæ by mechanical contact. Contact with the wet tongue is not indispensable; sudden friction against the lips or tongue fulfils the same purpose and it is well known that horses very rarely lick themselves. The primary larvæ thus liberated and brought into contact with the mucous membrance of the lips or gums immediately force their way underneath the epithelium; in this position they can be seen through the transparent epithelial wall. The primary larvæ, unlike the larvæ of Hypoderma, are not capable of penetrating the skin whether dry or wet. They then make their way along through the mucous membrane of the mouth gradually increasing in size during their course. The author observed a larva for nine days on the edge of the tongue of a guinea-pig, and at the end of this time it had increased three times in size and undergone a moult before entering the second stage."—*Tropical Vety. Bulletin.*

A Text-Book of the Principles and Practice of Veterinary Medicine. By David S. White, D.V.M., Dean of the College and Professor of Veterinary Medicine in the Ohio State University, Columbus, Ohio. Pp. 484, including index. Price 13/- net. (Lea & Febiger, Philadelphia and New York).

In his preface the author tells us that this work is designed primarily for the student, and adds that "it will be found valuable to the practitioner, investigator, and intelligent stockman who may have need of the fundamental principles of the practice of veterinary medicine presented in concise, clear-cut, and at the same time not too dogmatic form." The quoted sentence suggests that the book does not go very deeply into the many and complex problems of its great subject; and this unfortunately proves to be the case. The work embraces the whole field of veterinary medicine, so far as the diseases (including tropical ones) of the horse, ox, sheep, and pig concerned; those of the dog and cat are not included. This means that a very large field has to be covered in a comparatively small space; and the result cannot be called satisfactory. The majority of the most important diseases, such as tuberculosis, are treated with fair fulness, though with distinct compression and superficiality. On the other hand, many others, including not a few of considerable importance in practice, are dealt with very briefly. Rachitis, for instance, receives less than two pages, trichinosis about a page, and uræmia no more than half a page. The book is, as the author claims, concisely written; and, as his judgment in selecting the most essential matter is good, he has succeeded in bringing more information within his space than some writers would have done. For that reason the work may be of use for examination purposes to some students; but, taken as a whole, it must be said that it fails to treat its subject with the depth and fulness requisite for professional readers. Veterinary medicine, in these days, demands a much larger and more detailed work for its adequate presentation.

W. R. C.

OBITUARY.

Nye.—On 4th inst., at "Erin," The Avenue, Loughton Harriet Mary, the dearly beloved wife of Sidney H. Nye, F.R.C.V.S.

Willett.—On Sunday, April 14, at a nursing home, Agnes Gray, the beloved wife of John Willett, M.R.C.V.S., 6 Harley Place, Harley Street, N.W.

ARMY VETERINARY SERVICE

War Office, April 11.

The King has been pleased to approve of the following rewards for distinguished services in the Field in connexion with Military Operations, culminating in the capture of Jerusalem. Dated January 1, 1918:—

The Military Cross.

* * * *

Capt. (T./Major) J. Adamson, A.V.C.
Capt. E. N. Wood, Australian A.V.C.

Extracts from *London Gazette*,

War Office, Whitehall, April 11.

Regular Forces. Army Veterinary Corps.

Majors to be actg. Cols. while holding the appt. of Dep. Dirs. of Vety. Servs.:—(Bt. Lt.-Col.) W. S. Anthony (Mar. 14); (Temp. Lt. Col.) R. H. Holmes, C.M.G. (Mar. 24).

April 13.

Temp. Lieuts. to be temp. Capts.:—E. Armstrong, S. Robson, T. Hicks (Apl. 2).

April 16.

Temp. Qrmr. and hon. Lieut. to be hon. Capt.:—J. A. Weller (Apl. 8).

Territorial Force, Army Veterinary Corps.

April 12.

Capt. to be Maj.:—(actg. Maj.) S. Abson, D.S.O. (Apl. 1).

Capt. J. F. Rankin is granted the acting rank of Major while empld. as D.A.D.V.S. (July 30, 1917). (Substituted for that which appeared in the *Gazette* of Sept. 8, 1917).

April 16.

Lt. to be Capt.:—E. Child (Mar. 24).

The following casualties are reported:—

Wounded—Capt. T. Craig, A.V.C.
Maj. R. J. Stordy, D.S.O., A.V.C.

CASTRATION—A NOVEL DEFENCE.

Sir,—*Re* Mr. John Holland's letter in your last issue—if the profession care to appeal to a higher court, I have no objection, simply because I have made the running, paid the piper, and dug out the defence; which would be more than half the battle.

If I had the case to fight over again I should win, as I could have in court the two men who assisted me in 1916 and 1917, and who actually saw the operations; also defendant's coachman, and a man he had assisting him at the private stables (where I operated on two colts the same forenoon, 1917) to whom I imparted the information that the colt at farm was the subject of a tumour.

I can quite see your point, Mr. Editor, and also that of Mr. John Holland—where I was unfortunate in not being more careful over tumours when removed, but I can crave a certain amount of indulgence. We are at war; and at the particular time of year when I performed those operations it was a case of "putting your back to the wall" and getting through somehow. In the good old days, no doubt, I would have given more attention to the matter.—I am, yours, etc.,

CHAS. A. SQUAIR.

The Gables, Reigate, April 15th.

Joint-ill Inquiry.

The following letter appears under the heading "Letters to the Editor," in *The Scottish Farmer* of Apl. 13:—

Sir,—I have read the recent announcement in your paper on the above subject.

It is stated that "the second line of investigation has yielded much better results," and that "an interesting account of this laboratory work was submitted, and Profs. Muir, Dewar, and M'Call all expressed gratification with the results so far." Then, "the committee have resolved to proceed on the assumption that the conclusions based on the work of 1917 are well-founded."

The last sentence leads me to urge that, before proceeding further the bacteriological results, together with the conclusions which have been drawn therefrom, and the consequent lines it has now been decided to go upon, should be published in a scientific journal, preferably a veterinary one.

I was present, as a visitor, at the recent meeting of the Glasgow sub-committee, and I venture to predict that if the findings and conclusions and intended lines of future work are published as they were detailed to me in answer to my questions at the meeting, there will be as much astonishment amongst experienced veterinary scientists and practitioners, as there has been to me.—Yours truly,

G. H. GAIGER, Prof. of Bacteriology,

11th April. Glasgow Veterinary College.

Unscheduled Animal Diseases.

The following excerpts are from a letter by Mr. A. Levie, F.R.C.V.S., of the Midland Agricultural College, which appeared in *The Farmer and Stockbreeder*, last year. There is no indication in the letter upon what basis the loss is computed, but it is common knowledge in the veterinary profession that in the aggregate the annual loss is very large, and that further education of the farmer in Sanitary Police is a first essential to a better state. The success against contagious abortion, and the promising commencement against swine fever are evidence that more can be accomplished.

"In Great Britain, up to 1914, on an average 4256 farm animals died weekly from non-scheduled diseases, which means approximately 221,000 per year. To-day, owing to war conditions, these figures may be doubled To this must be added a similar number of animals which have recovered from sickness, but their produce or work, as the case may be, has been lost during the period of sickness, and their market value has decreased.

Three-fourths of the capital expended on a farm by a tenant is in live stock, and no matter how industrious the farmer may be, no matter how successfully he may, for a time, work his land in trying to produce vegetable food for his country, if his live stock farming is a failure, a time will come when the vegetable food returns will automatically decrease through shortage of capital to replace his losses in live stock and to supply nourishment for his land. Sooner or later he has of necessity to leave the farm. The man's capital value to the nation has gone, and, what is worse, he leaves the farm at its minimum power of production in vegetable and animal food. There are hundreds of such cases. In times of peace such a state of affairs is most serious, but it is out of all proportion in times of war. Let us therefore hope that the present Government, while speeding up Britain's output in vegetable food, will not overlook the equally important question of how to speed up Britain's output of animal food products.

Kingston, Derby.

Uses of Wool.

Cotton, silk and flax can be compelled to take the forms desired by the manufacturer, but wool will only go its own way, and requires "humouring." There is no sharp dividing line between the various classes of wool. Many qualities of merino, for example, can be made into either woollen cloth, worsted coatings, worsted stuffs for dress goods, or flannels. Leicester wool or Colonial cross-bred, when combed, produces a "top" which is available for almost any purpose except the production of woollen goods, whilst the "noil" or short wool, obtained from the same process can only be used, according to its fineness, for the manufacture of fancy woollen goods, flannels, blankets, or hosiery. Merino wool, when combed, produces a proportionately long wool or top, suitable for the manufacture of the finer grades of worsted coatings, cashmeres, and Italians, but the noils are only available for making fine woollen-faced cloths, fine flannels, and fine felt hats.

It is an old saying that "you cannot make a silk purse out of a sow's ear." It is equally true that a lustre Orleans piece cannot be made out of pure merino wool, or worsted coating out of Lincoln hog. To take pure lustre as an example of the way in which wools can be used, the chief sources are mohair and alpaca, which can be supplemented by the wools of Lincoln, Yorkshire, and Nottingham. It must be noted in this connection that white and delicate colours are made out of mohair and English lustre wools, whilst blacks, browns, and mélanges are made of alpaca, llama, or other goats' hair.

Leaving the range of pure lustre, there is a large production of goods known as demi-lustre, made of such wools as Irish, North, Kent, or Romney Marsh, etc., and Colonial cross-breds, which make serges, cords, reps, poplins, various fancies, and lastings. Amongst these might be mentioned the coarser kinds of demi-lustres, such as Gloucester, Oxford, Warwick, and Northampton, and sometimes Devon and Cornish. These are manufactured into camlets, lastings, braids and buntings.

Next in order comes the mixed breeds, which form a very large proportion of the growth of the United Kingdom, *i.e.*, wools which contain in a greater or less degree a cross of the Scotch Blackfaced or mountain wools. These can be made into almost anything. The pure Blackfaced usually finds its way into carpets,

but the various crossbreds are accounted for by the manufacture of moreens, damasks, and Scotch tweed mixtures.

To the same class belong the Cheviots and the superior classes of Welsh and Irish mountain wools, which are made into goods of quite a unique character. Large quantities of the so-called Cheviot goods, however, are produced from the cross-bred wools of Australia and Buenos Aires. Some of these are known as Cheviots, tweeds, Scotch fancy suitings, Scotch fingering yarns, etc.

In the olden time the finest wool to be obtained in this country was the English Southdown, excepting, of course, the very fine Saxony wool which was largely imported into Bradford in the early part of this century. Both English Southdown and Saxony wool has now been supplanted for dress goods purposes by the enormous imports of Colonial and Buenos Aires wools. There remains, however, one market for Southdown which it is not likely to lose, namely, hosiery, for it possesses an elasticity and springiness which is not to be found in any other wool. It is principally grown in Sussex, Wiltshire, Hampshire, Shropshire and Dorset, but the Southdown blood is to be found in various proportions of admixture in almost every country in the United Kingdom.

There is no doubt that, during the life of the present generation, merino wool has held the most prominent position. It gained largely in popularity at the time when the public was becoming tired of the lustrous and hard-haired fabrics, and for twenty-five years it has had the chief command of the market. It is soft to the touch, will take the most solid and the most delicate colours, and is available for the heaviest woollen cloths, the lightest of ladies' dress goods, and the smoothest of linings.—*The Farmers' Gazette* (Dublin).

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered. *
GT. BRITAIN. Week ended April 13	4	5			3	3	90	196	19	35	13
Corresponding week in 1917 ...	15	15					45	87	9	69	25
Corresponding week in 1916 ...	18	19					41	93	4	125	396
Corresponding week in 1915 ...	16	18					37	85	1	93	360
Total for 15 weeks, 1918	100	115			13	33	2052	4033	225	249	96
Corresponding period in 1917 ...	205	237			10	19	1110	2356	336	680	251
Corresponding period in 1916 ...	199	235	1	24	20	59	1095	2674	157	1289	4007
Corresponding period in 1915 ...	236	265			9	14	‡105	‡228	137	1097	4550

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 19th March, 1915, inclusive
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—Essex 1, London 2
Board of Agriculture and Fisheries, April 16, 1918 Excluding outbreaks in army horses.

IRELAND. Week ended April 6	...	...	...	...	...	...	Outbreaks 3	6	...	...
Corresponding Week in 1917 ...	...	...	...	...	...	...	1	3	9	62
Corresponding Week in 1916 ...	...	...	...	...	...	...	4	12	18	97
Corresponding Week in 1915 ...	...	...	...	...	...	...	...	5	4	23
Total for 14 weeks, 1918 ...	1	1	...	...	...	...	49	141	6	26
Corresponding period in 1917 ...	2	2	...	...	1	1	16	169	67	429
Corresponding period in 1916 ...	1	5	...	...	...	...	26	184	77	391
Corresponding period in 1915 ...	1	1	...	...	...	...	13	180	69	430

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 8, 1918.

IRELAND. Week ended April 13	...	...	...	...	...	...	Outbreaks 6	3	1	1
Corresponding Week in 1917 ...	...	...	...	...	...	...	...	5	10	43
Corresponding Week in 1916 ...	...	...	...	...	...	...	...	6	8	32
Corresponding Week in 1915 ...	...	...	...	...	1	3	...	22	9	35
Total for 15 weeks, 1918 ...	1	1	...	...	...	...	54	144	7	27
Corresponding period in 1917 ...	2	2	...	...	1	1	16	174	77	472
Corresponding period in 1916 ...	1	5	...	...	...	...	28	190	85	423
Corresponding period in 1915 ...	1	1	...	...	1	3	13	202	78	465

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 15, 1918
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection

The Veterinary Record, April 20, 1918

To illustrate notes by
MR. SAM SMITH AND DR. O. CHARNOCK BRADLEY.